TREES
Magazine

A Street of Sugar Gum Eucalyptus

ELMS PLANTED IN AMERICA — *Donald Wyman*

STREET TREES AND CIVIC VALUES — *Hollis Howe*

October, 1940 CITY FORESTRY NUMBER 25 Cents

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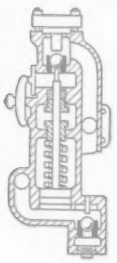

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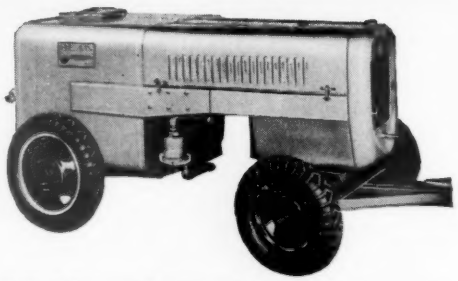

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ALONG THE WAY

With . . . **ED SCANLON**

■ JOHN BALCH of MILTON, MASS., wishes TREES were monthly. We appreciate the thought but think bi-monthly would suffice. However, until a majority of OUR GOOD FAITHFUL SUBSCRIBERS begin to POINT OUT THE VALUE OF TREES to the people THEY BUY EQUIPMENT, TOOLS AND MATERIAL from we'll have to stay on our quarterly schedule.

* * *

■ *Sure spent an unhappy week during the NATIONAL SHADE TREE CONFERENCE in Detroit. Had to cancel my train reservation on short notice because of business, but all I could think of all week was all of the LIE-SWAPPING GABFESTS I WAS MISSING!*

* * *

■ Ask HAROLD McFADDEN at DEL AMO NURSERIES (Calif.) all about the vigorous, frost-proof Hibiscus that he refuses to propagate.

* * *

■ *Spent the morning hours of my birthday (Sept. 5th) planting one tree and transplanting another. The transplant is ALEURITES FORDII, Chinese Tung Oil tree, and the new planting SPATHODEA CAMPANULATA, West African Tulip tree. The latter is described by Dr. Fairchild ("The World Was My Garden") as the most spectacular flowering tree in the world. Both trees are planted on the grounds of the Santa Monica Post Office so they'll be here for a long time—God willing.*

* * *

■ My shout for pix of fastigiate forms sure met with a hearty response. HOLLIS "JUST PLANE" HOWE, custodian of the arboricultural destinies of the village named for Lord Baltimore, sent a couple swellies of Ginkgo, English oak and Bolleana poplar. MALCOLM A. MILNE, ditto the above for the town named after Jack Benny's nemesis—Rochester (N. Y.)—sent A. PLATANOIDES ASCENDENS and A. SACCHARUM MONUMENTALE and TULIP. GUY E. YERKES of the U. S. Horticultural Station at Beltsville, Md., in addition to fine pix of fastigiate Ginkgo and English oak, promised several seedlings of the same. H. J. HOHMAN of KINGSVILLE NURSERIES (Md.) sent a fine Ginkgo, also Sophora japonica and S. japonica pendula. WALTER P. MORROW of SEWICKLEY, PA., joined the party with pix of Fernleaf and Weeping beech, while DR. A. E. STENE of RHODE ISLAND and ERNIE ZEVITAS of BROOKLINE, MASS., suggested locations.

Many thanks for a swell bunch of pictures—hope more will be forthcoming and would especially like to see one of A. SACCHARUM MONUMENTALE, A. RUBRUM COLUMNARE and CARPINUS BETULUS FASTIGIATA.

* * *

■ Received some interesting literature from friend W. L. JEFFREY of FULTON, MO., regarding a new tree mover he has built.

* * *

The Cover Picture . . . The beautiful picture on the cover shows Columbia Street, in Claremont, Calif., which is planted to Sugar Gum (Eucalyptus corynocalyx). This picture was taken by Ralph D. Cornell, Fellow American Society of Landscape Architects, Los Angeles. Many thanks, Ralph!

■ *Oh, oh, is this a piperoo!—quote from NORTH AND SOUTH DAKOTA HORTICULTURE: "The jawbone of an ass is just as dangerous a weapon today as it was in Samson's time."*

* * *

■ *DANA BOWERS, Landscape Engineer, and "RED" MYERS, nurseryman for the California Highway Department, dropped in. "RED" got a big kick out of his first visit to Southern California and his first look at several late blooming jacarandas.*

* * *

■ This picture taking business sure gets under your skin. Just acquired a Graflex figuring that at least I have a camera that will take a picture under any conditions—all I have to do is learn how to use it!

* * *

■ *Glad to hear that C. BURT FOX, SUPT. OF PARX, SPRINGFIELD, MO., is up and able to take nourishment after a recent illness blitzkrieg. He's working on the STREET TREE SURVEY as vice-chairman for Missouri.*

* * *

■ I'm surprised someone failed to call me on the way the word GINKGO was kicked around in the July issue. Spelled it GINGKO about six times—still think it sounds better that way.

* * *

■ *PAUL TILFORD mentions that the Executive Committee of the NATIONAL SHADE TREE CONFERENCE has cut the price of back issues of the Proceedings to six bits. A bargain, boys—hop to it!*

* * *

■ VANCE I. SHIELD, the old maestro of St. Louis, Mo., was elected President of the National Arborists Association. WES HOLLISTER, the sage of Kent, still reigns as wielder of the pen and ink. More arborists should take an active part in this organization.

* * *

■ *LEON MILLER of ANGOL, CHILE, sends a booklet from the nursery where he is employed. Their stock of shade trees includes BIRCH, CHINESE ELM, GLOBE LOCUST, FLOWERING PLUMS and CHERRIES. For reforestation, MONTEREY PINE, EUCALYPTUS, OAKS and POPLARS.*

* * *

■ Our good friend, GILBERT SKUTT, LOS ANGELES super PARK SUPERINTENDENT, has just been notified of his election as a DIRECTOR in the AMERICAN INSTITUTE OF PARK EXECUTIVES. He nicked me for a membership already—so steer clear of him!

* * *

■ *Another good argument for CERTIFIED ARBORIST LAWS is the following business card, typed, picked up by MAC GREGORY of the SMITTER TREE CO. . .*

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* * *

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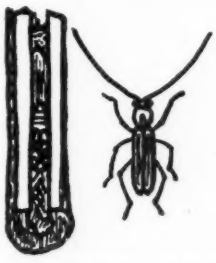
■ *We've an ardent admirer down in SHELBY, N. C. He is H. C. WILSON, one of the DAVEY TREE EXPERT COMPANY'S super supers in those parts.*

* * *

■ In looking over the completed charts that have been sent in on the National Street Tree Survey, I cannot help but get a big tingle from the anticipation of the complete publication of the ten charts that will eventually evolve from this survey. There is much sectional data on individual species coming to light that should be very worthwhile over a considerable radius from that point. Another striking point has been the regularity with which a certain few trees show up on charts from practically all sections of the country.

This HIDDEN ENEMY to TREES . . . the BORER



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EDWARD H. SCANLON, Editor
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CORDIALLY YOURS

OUT OF THE SHADOWS

We believe that a step taken recently by the National Shade Tree Conference and endorsed by the American Institute of Park Executives is definitely the glimmer of the dawn of a new era in the treatment of many insidious tree diseases.

The National Shade Tree Conference committee on Tree Therapeutics recently submitted a proposal for research. This research would have to do with internal disorders of trees that today have been deadly in their workings and completely baffling to pathologists. These disorders, to name a few, are the Lombardy poplar and Mimosa wilts; Dutch Elm disease, Cephalosporium and Phloem Necrosis of Elms, and Norway Maple wilt. Recently an internal disorder of Q. agrifolia has caused consternation in California.

The writer has long held the opinion that injections of specifics would one day lift the shadows of uncertainty and doubt in the treatment of many now baffling tree disorders. The road ahead is a long one and undoubtedly beset by countless obstacles, however, a start has been made and TREES proposes to cooperate to the fullest extent in pushing this work.

Some years ago in preparing the program for the second Western Shade Tree Conference the writer invited Dr. W. H. Chandler of the University of California to discuss injections. Dr. Chandler's paper appears in the Proceedings of that meeting, but to date little has been accomplished until the recent report of the Therapeutics committee.

To further the work TREES has invited some noted scientists to give their views on the subject. These articles will appear in future issues.

ARE YOU A GOOD SALESMAN?

Often have you heard it said that "good salesmen are born." We take exception to that bromide.

Fast talk, wavy hair and an "Irium" smile are not the sole requisites of a salesman. True, these attributes will sell a bill of goods—once—but the real test is, dare you face the victim again?

The type of salesman that lasts is the chap who knows what he is talking about. Let us use the subject, trees. Arborists sell preservation programs; Park Superintendents and City Foresters "sell" the citizen street tree programs; Nurserymen sell the actual tree. How much do you know about trees? Where the various species originate; biblical or historical anecdotes connected with them. Can you fluently divert from your par-

ticular field and intelligently acquaint your client with at least a fair picture of some other phase of the use of trees? Intelligent, free flowing conversation on various aspects of your profession will do more to help you sell a client right than all the "baloney" in the world.

Toward this end TREES is attempting to run articles and features that will help you broaden your knowledge of trees in the various professional fields of endeavor in which they either predominate or play a very important part. This policy we firmly believe will make TREES an indispensable source of your sales technique.

A MILESTONE IN ARBORICULTURE

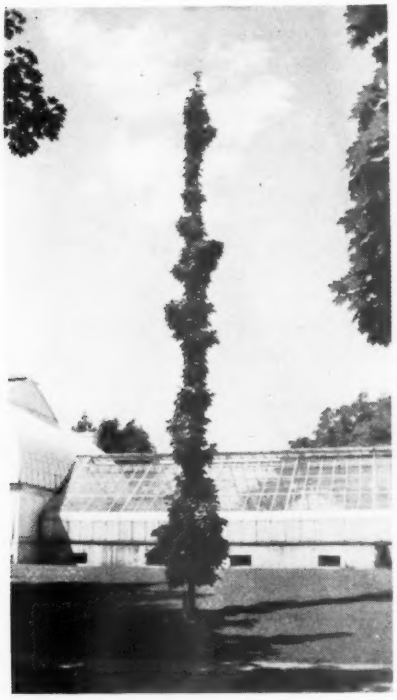
Arborists in New Jersey have finally emerged victorious in a long fight to have enacted a "Certified Tree Expert" law.

Their fight started in 1935 but by dogged persistence they have won. This precedent should go a long way toward simplifying similar actions in other states. In California the Western Shade Tree Conference will, at the next session of the legislature, again submit their "Certified Arborist" bill which failed to receive the Governor's okay last year.

We like the name "Certified Arborist" in preference to "Tree Expert," because of the intangible word expert and because of the more professional aspect cast by the word arborist. However, history has been written and the profession of Arboriculture has in its power now the impetus to advance rapidly in the next few years.

Another thing not embodied in the New Jersey bill, but which can easily be supplied by amendment, is a provision for non-commercial Arborists. City Foresters, Tree Wardens and others engaged by governmental subdivisions would undoubtedly benefit considerably by such recognition and such agencies too would have definite qualifications upon which to choose men for various positions. It would help to raise the standard of this type of tree work. The California bill contains such a provision. It was proposed by governmental employees.

ODDITREES



—*Courtesy, Rochester Park Department*

This Sentry maple (*Acer saccharum monumentale*), one of a pair standing in front of the Conservatory in Highland Park, Rochester, N. Y., is in some respects an *Odditree* but seriously has many possibilities.

Malcolm A. Milne, Junior City Forester of Rochester, who made the contribution, says the trees are 25 feet tall and at no point exceed 4 feet in spread. They have never been pruned except to remove several strong laterals.

The possibility that with a light biannual or annual pruning for several years the variety might fill out and take on a "better fed" appearance should encourage much greater use of the Sentry maple, not only on narrow streets but for many landscape uses. Its brilliant fall coloring is a strong recommendation, as is too its hardiness and the other known attributes of the sugar maple when compared with the tree now most universally used where the fastigiate form is desired, the Lombardy poplar.

VANDALISM IN HIGH PLACES

Showing trees sawed down to give visibility to signboard at Doheny Palisades, Calif.

Who is guilty of the destruction of the three trees pictured here we do not know. But a notice affixed to the signboard shows that the sponsor is listed as the LAGUNA BEACH CHAMBER OF COMMERCE. Ironically, Laguna Beach is a Southern California artists' colony noted for its love of beauty. The criminal destruction of these trees (*Eucalyptus cornuta lehmani*) to give visibility to this sign is a fine criterion of the type of mentality that preaches one thing and, by night, does the opposite. Someone should be punished for this rotten trick and we sincerely hope that when the attention of the people owning the land and trees is called to it, they will go into action. The sign is located at Doheny Palisades. Fortunately the trees are not on the highway right-of-way. H. Dana Bowers, State Landscape Engineer, was with the writer when this hoodlumism was observed, and expressed himself vehemently against the perpetrators.

—Edward H. Scanlon

Street Trees and Civic Values

By Hollis Howe
City Forester
Baltimore, Md.

It has been said, with considerable truth, that there is no other way in which so much of civic value can be created at so small a cost as by the planting of street-trees. To be a complete truism this axiom requires certain qualifications. It is proposed to call attention to some of these requirements and to point out a few of the seemingly necessary factors that influence this desirable accomplishment.

To anyone at all familiar with street-tree maintenance, it should be obvious that there is much room for improvement, not only in the trees themselves, but in the attitude usually taken by those to whom one must look for the necessary funds to do the work creditably.

Provision for the planting of several hundred or more trees each year is not wise, or even desirable, unless a compensating allowance for their future maintenance can be anticipated. This should be quite possible if certain factors are demonstrated. The proper selection, arrangement and maintenance of street-trees calls for a certain amount of preliminary training and experience, together with keen observation and applied logic; and, finally, a live interest in current development as they effect the materials used. The many examples of failures where attempts have been made by otherwise capable engineers, for instance, to establish shade-trees should be conclusive.

Street-trees, under the most favorable conditions, are at a decided disadvantage in comparison to park and lawn trees. Their proper establishment calls for the services of a specialist. This fact, however, is too often not appreciated and is seldom compensated for, except in rare cases where civic pride is inherent or there is a willingness or ability on the part of those responsible to be actuated by high public spirit. It is hoped that it can be shown herein that adequate provision for street-trees is not only desirable but a good sound investment.

Past performance would appear to show definitely that there is an urgent need for a much wiser selection of varieties used. Too often in the past the choice of varieties has been determined by such factors as ease of culture, availability and price. A street-tree, to be planted in the last place where anyone might properly, or otherwise, expect anything to survive, must of necessity be capable of reasonable perennial growth. That this may be slow is often an advantage. Periodical heading-back is not only undesirable from the standpoint of natural beauty and conducive to ultimate hollowness, but it is expensive, as any public utility company will confirm. Selections then, so far as possible, should be such that the natural shape of the tree will conform to the purpose to be served.

Due to popular demand for other sorts, many desirable forms for street use are not available—at least not in quantity. Too often the demand is influenced by some outstanding characteristic of appearance such as color or shape and rate of growth. The grower cannot be blamed for propagating to meet this demand, particularly if those responsible for street-trees fail to demand something different. Many times, of course, the planting and, hence, the selection is made by another and the trees then turned over for city maintenance, in which case there is again no opportunity to influence demand. This could be corrected by the arborist through consultation with the developer before the subdivision is planned. Such cooperation would also make possible better arrangement.

Probably the city forester does not exist who is able to follow the dictates of his conscience as to spacing and arrangement, except perhaps in the District of Columbia, where all such matters are liable to be more or less arbitrary. Elsewhere, if such services as light, fire-plugs, sewer-inlets, etc., do not interfere, oftentimes the property-owner will do so, and it is usually best to be deferential. By planning the arrangement of trees along with other services—which, after all, they are—interference can largely be avoided and their purpose furthered.

Once this matter of cooperative tree-planning is gone into, one immediately is confronted with one of the prime curses of design, standardization. One suddenly finds that streets of a certain type have

(*Continued on page* 12)

—*Photos courtesy Division of Forestry, Los Angeles, Calif.*

An important business section of Beverly Hills, Calif., planted with COCOS PLUMOSA. *Certainly these trees do not hide signs or hamper business in any way.*

This picture was taken just a short distance outside the City of Beverly Hills and shows an unattractive business street. This picture could have been taken in almost any American city.

Elms Planted In America

By DONALD WYMAN
Arnold Arboretum
of
Harvard University

(Editor's Note: This paper by Dr. Wyman to assist the reader to untangle the many varieties of Ulmus will be presented in two parts. In the next issue there will be discussed "Species Native to Europe and Asia.")

Twenty-five years ago, Professor Charles S. Sargent, Director of the Arnold Arboretum, wrote the following statement concerning the European elms —unfortunately just as true today as it was then: "There is probably more confusion in the identification and proper naming of these trees (the European elms) in American parks and gardens than of any other group of trees, and it is only in very recent years that English botanists have been able to reach what appear to be sound conclusions in regard to them. The confusion started with Linnaeus, who believed that all European elms belonged to one species, and it has been increased by the appearance of natural hybrids of at least two of the species and by the tendency of seedlings to show much variation from the original types."

Today, with six elm species native in the United States, five species native of Europe (including many varieties), and several more species native of Asia, the picture becomes confused indeed. The elm is, and always has been, a standard shade tree, for even though it is threatened in certain sections by the Dutch elm disease, the gardening public will still plant elms.

In this article approximately fifty elms will be mentioned. About thirty of them have been listed as available in the nurseries of this country during the past ten years; all but five of them are growing in Harvard University's Arnold Arboretum at Boston. Simply because a tree cannot be bought from a nurseryman does not mean that we should say nothing about it. On the contrary, if it makes a good ornamental specimen, it should be discussed, and eventually someone will realize its good properties and begin to grow it for public distribution. The nomenclature of these elms has been sadly confused, but recently it has become straightened out so that the scientific names used in this article are those used by Alfred Rehder in the new edition of his *Manual of Cultivated Trees and Shrubs*. Also, the same names will probably be used in the forthcoming edition of *Standardized Plant Names*. Consequently, though some of these names may be new to the gardening public, they are the ones that will be used in the near future.

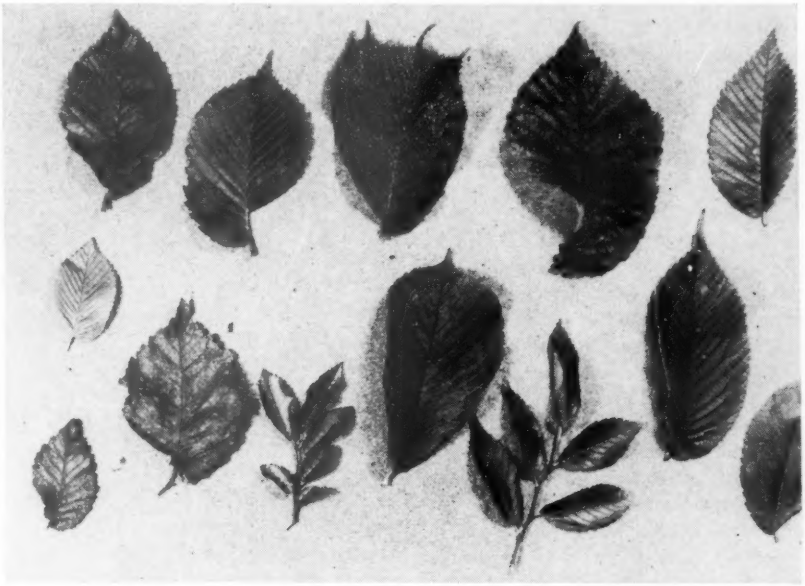
THE NATIVE AMERICAN ELMS

Of the six native American species, only three are used in ornamental work —the American elm (*U. americana*) and its varieties, the slippery elm (*U. fulva*), and the winged elm (*U. alata*). The winged or wahoo elm is hardy only in the southern United States, being native from Virginia to Florida and westward to the Mississippi River and Texas, while the other two are native throughout the East and Mid-West. With these three native species there is little to confuse, but points of identification will be given together later at the end of the article.

Rich in the early history of the United States, the American elm is the most outstanding and the most deserving of all the elms. It is widely distributed throughout southern Canada and the eastern and mid-western part of the United States. In early colonial times, numerous stately specimens were used as meeting places where many important events took place. Some of these historic elms are still standing today and are well over 100 feet in height. Many a community in the eastern and mid-western United States has its own local history closely tied to some huge elm which is yet living; and I am certain that it is the consensus of opinion in hundreds of communities that it would be a dire calamity if we did not continue to use the American elm in landscape work.

There is no ornamental tree just like the American elm. Its wide, vase-shaped form is unique, making it an excellent specimen for lawn and for street planting. Its lofty branches allow much air circulation underneath and, though they supply perfect shade, the widely arching branches do not hinder views from houses. This wide arching habit, unique to the American elm, is much more evident in mature specimens than in younger trees and varies considerably when the trees are grown from seed. That is the advantage of using trees vegetatively pro-

(*Continued on page* 13)



—*Photos courtesy Arnold Arboretum*

The above picture shows the various forms of the leaves of Ulmus. Top row, left to right—Hollandica major; laevis; laciniata; Glabra; Americana. Bottom row, left to right—Carpinifolia; ploti; parvifolia; japonica; pumila; fulva; thomasi. Lower left—procera.

Dusting Trees For Pest Control

By CHAS. G. HAENGGI,
City Forester,
Sacramento, Calif.

Shade trees because of their size and location present problems almost insurmountable, when because of insect attacks or diseases they require Pest Control treatment.

First, the extreme height presents the most serious problems. In the West, Elms and Sycamores ranging in height from 110 to 125 feet are not uncommon. This height is beyond the limits of the largest mobile spraying equipment available.

Second, the problem created by the many highly polished automobiles parked on streets and in yards close to the street, both night and day. When the number of trees requiring treatment involve thousands along many miles of streets, clearing streets of cars becomes impossible.

Third, the problem created by the weather. Rain and even a slight wind can delay a pest control program for days, when every day is of utmost importance.

Despite the problems mentioned, when a serious pest or disease attacks Park or Street trees, the public demands that something be done. This was the problem that faced the City of Sacramento in 1930 when the elm leaf beetle made its first appearance.

The City immediately purchased a spray machine of the largest capacity and set to work trying to control the elm leaf beetle, but the problems previously mentioned rendered the work only partially effective and the number of trees requiring treatment approached ten thousand.

To speed up and increase the number of trees treated in a given period of time, night work with the aid of large flood lights was adopted. A large fifteen hundred gallon spray tank was installed on the sprayer and a stationary gun mount which raised the nozzle of the gun fifteen feet from the ground was installed.

In 1934 it became clear that spraying alone could not cope with the problem of treating ten thousand elm trees. Many were over 110 feet in height. The use of towers was out of the question because of many overhead wires. Climbing of the trees to get complete coverage was impracticable because of the hazzard involved and slowing up of the work.

After considerable study dusting seemed to offer possibilities, if large enough equipment could be secured.

The market was searched for a duster large enough to suit our needs, but none was in the course of regular manufacture. If a dust program was to be adopted a machine would have to be assembled.

A number three Sturtevant fan having a nine inch discharge was selected as the blower unit. To this a six-cylinder truck motor of a popular make was connected through six B section V belts. A truck motor was selected rather than a regular passenger car motor because of maximum torque at low motor R.P.M. A four to one ratio was used on the belt drive. Under average conditions the motor runs at 1000 R.P.M. and the fan impellar at 4000 R.P.M. Adequate cooling was provided by a truck type radiator core.

A large hopper, one large enough to hold 300 pounds or more of dust, with a horizontal agitator and dust feed as-

(*Continued on page* 15)

A Man and His Friend

Recently the field of Tree Preservation lost a valued friend and the National Shade Tree Conference its founder and staunchest pillar. Dr. Haven Metcalf has gone to receive the reward for a job well done, but he leaves behind a memory of deep gratitude in the hearts of arborists and scientists across this broad land for his splendid leadership from a high position, the prestige of which was incalculable in its effect in unifying the disordered array that existed in the field of Arboriculture around 1925.

—*Photo courtesy Rush P. Marshall*

Dr. Haven Metcalf and his beloved Beech tree

The accompanying photo of Dr. Metcalf shows him with a beloved friend, an old beech of his boyhood days. Dr. Rush P. Marshall, to whom we are grateful for the use of this picture, explains:

"While working with Dr. Metcalf in North Monmouth, Maine, on August 1, 1933, he requested that I take his picture beneath a large beech growing in the woodland. When this was taken, he told me that as a small boy he often played beneath this old beech and that throughout his life he had reverenced it as a friend."

Dr. Metcalf was Chief of the Division of Forest Pathology, U. S. Bureau of Plant Industry. Founder of the National Shade Tree Conference, he served as Chairman of the second and third conferences.

Considerations In Planting Street Trees

By Malcolm A. Milne
Junior City Forester
Rochester, N. Y.

In planning the species of tree to be planted on any city street a great many factors must be considered in order to insure lasting satisfaction along with the desired result. It requires a knowledge of trees and equally important, a knowledge of the problems encountered in city forestry. Through this knowledge trouble may be anticipated in advance, and thus errors in planting may be minimized. One factor alone should not determine the species to be planted, but a combination of all the factors involved should be considered, and the importance of each factor weighed, before a decision is made.

This picture shows Montgomery Avenue in Detroit one year after planting. Species, American Elm. Planted 40 feet apart.

Factors to be considered in planting street trees fall into two main groups—those of tree habits and requirements and those of external factors. Tree habits and requirements remain constant for any species as a whole, whereas the external considerations may change with the growth of a city and progress of our civilization.

City forestry is far enough advanced to enable us to foretell what trees would prove undesirable in a certain location and what trees would be satisfactory in the same location, provided no change, such as street widening, takes place.

For instance, we know the American elm is not suited to a parking space of less than ten feet, because of the butt swell and large diameter when mature. Or, the American elm may be unsatisfactory on a street with a wide parking space if the building line is too close to the sidewalk to accommodate the wide crown spread. Or again, all other factors may be satisfactory but the street may be within the Dutch elm disease zone or in an area of severe elm leaf-beetle infestation, so that success of growing American elm trees would be problematical. Any one or a combination of the above factors would indicate some other species should be used.

There may be a temptation to plant certain species because of their conspicuous flowers, showy bark, etc. The important factors should not be forgotten, however, even though there be a strong desire to produce an unusual or startling effect.

Special areas such as bridge approaches, parkways, traffic circles, and triangular street cutoffs, may call for careful landscape treatment where the ordinary rules of street tree planting may not apply.

There are areas in all cities where the conditions are so adverse to the growing of trees that planting should not be attempted. It would be far better to spend the time and money on streets where reasonable success is assured and appreciation is felt.

One species only on an entire street usually gives a better effect than an admixture of species, unless conditions vary greatly on different sections of the street. In the best residential areas small shrub-like trees such as Catalpa bungei or the flowering crabapples may be spaced between shade trees set well apart. Widespread planting of shrubbery may prove to be a nuisance in future years, and adds greatly to maintenance cost.

Several species should be used throughout a city, rather than a concentration of two or three species. The use of over twenty per cent of one species may leave a city in serious difficulty should a disease of that species reach serious proportions or an insect infestation become severe. Also, certain species such as the American elm and soft maples may be severely damaged in a windstorm, whereas the hard maples, oaks, and planes would show little damage from the same windstorm.

From a landscape point of view uniformity can be attained on individual streets and variety over the city at large.

Certain trees were planted on our streets thirty or forty years ago which have proved very unsatisfactory and which are now seldom used. Poplars are very injurious to sewers, are brittle, and send up root suckers for a radius of as much as 100 feet around the tree. The roots of the silver maple have a tendency to clog sewers and the trees are subject to severe damage by wind and rapid progress of wood-destroying fungi. They are, however, very attractive, and

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This picture of the same street, Montgomery Avenue in Detroit, was taken twelve years after planting. Trees do make a difference.

—Photos courtesy Detroit, Mich., Park Department

Interest In Street Tree Survey Mounts

By EDWARD H. SCANLON

With the addition of chairmen in three new sections the National Street Tree Survey instituted by TREES several months ago has swung into high gear.

The new chairmen and their state vice-chairmen are: Section Two: W. E. Rose, Village Forester of Hinsdale, Ill; Section Six: Grant R. Bowen, Landscape Engineer, State Highway Commission, Salt Lake City, Utah; Section Nine: C. F. Holderness, City Arborist, Pasadena, California.

Invitations by Mr. Rose to serve as state vice-chairmen have been accepted

National Committee

Dr. Donald Wyman, Horticulturist, Arnold Arboretum, Jamaica Plain, Mass.

by the following: Michigan: Carl Fenner, Asst. City Forester of Lansing; Ohio: W. P. Lanphear, Forester for the City of Cleveland Heights; Wisconsin: C. L. Wachtel, Arborist, Wauwatosa; Illinois: Roy O. Walker, Landscape Construction Supervisor, Chicago Park District, Chicago.

Mr. Bowen in Utah has just commenced his work, but has three vice-chairmen, Mr. T. S. M. Lease, Supt. of

Chairman Section 2

W. E. Rose, Village Forester, Hinsdale Ill.

Parks, Great Falls, Montana; Mr. Walter Pesman, Landscape Engineer, Colorado Highway Dept., Denver; and W. H. Marcellus, Roadside Improvement Engineer, State Highway Dept., Boise, Idaho. Because the Southern California territory under Mr. Holderness is a comparatively small area, no vice-chairmen will be necessary.

The survey has struck a very responsive chord among City Foresters and Park Superintendents, and the number of charts sent out to interested collaborators promises to produce a wealth of tremendously valuable material. A tentative minimum figure of fifteen completed charts has been set for each state. From this number it is believed that a very fair composite figure will be obtained for the various tree requirements in the several sections.

Map showing sectional divisions upon which survey will be based

While there may arise a question as to the climatic divisions, credence is given to the fairly close uniformity of the divisions based on a comparison of charts already returned from the sections.

The many vice-chairmen so far functioning have all given generously of their time and effort, but special mention must be made of the very active work being accomplished by D. D. Obert, City Forester of Fort Worth, Texas; Everett S. Henderson, Junior Engineer, Roadside

Chairman Section 9

C. F. Holderness, City Arborist, Pasadena, Calif.

Improvements, Augusta, Maine; Carl Fenner, Asst. City Forester, Lansing, Michigan; T. D. Gray, Extension Landscape Architect, University of West Virginia; R. G. Williams, Supt. of Parks, Greensboro, N. C; Paul L. Sandahl, Supt. of Parks, Des Moines, Iowa.

Recent appointments of state vice-chairmen include: Section 3: Alabama, W. S. Lunsford, Director State Parks, Montgomery; Northern Florida, Dr. H. S. Newins, Director, School of Forestry, University of Florida, Gainesville; Kentucky, Edward J. Seelbach, Supt. of Parks, Louisville; North Carolina, R. G. Williams, Supt. of Parks, Greensboro;

Vice-Chairman New York State

Marshall E. Higgins, Sec'y, Onondaga County Parks and Planning Board, Syracuse, N. Y.

South Carolina, C. C. Gibson, Supt., Tree Department, Columbia; T. D. Gray, Extension Landscape Architect, University of West Virginia, Morgantown; Section 5: Arkansas, J. R. Cooper, Head of Horticulture & Forestry, University of Arkansas, Fayetteville; Kansas, Wm. R. Yerkes, Landscape Architect, Board of Park Commissioners, Wichita; Louisiana, Felix Seeger, Supt., Parkway Commission of New Orleans; Missouri, C. Burton Fox, Gen'l Supt. of Parks, Springfield.

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"Shall the Work of the Tree Doctor--"

In New York at the Fifteenth National Shade Tree Conference, a paper by E. G. Rex entitled, "Tree Therapeutics" aroused so much interest that the Shade Tree Research Investigating Committee chairmaned by Dr. C. G. Deuber very shortly thereafter sent out a questionnaire to all members on the subject. The survey, according to the questionnaire, would include: (1) a summary of the research programs in progress; (2) recommendations for the enlargement and continuance of present projects; (3) recommendation of new projects required for present and future needs; and, (4) suggestions for the establishment of additional research programs through new agencies such as research foundations or other means.

A short time ago a brochure was issued by the Committee. With the exceptions of some photos the report is reproduced here.

"The welfare of our trees is dependent on proper nutrition and reasonable freedom from molestation by disease. Most of our trees apparently are so located that the nutritional demands are satisfactorily met. However, frequent involvement with numerous disease organisms introduces a complication which exhausts, with little significant accomplishment, the present inventory of available antidotes.

The science of medicine recognized, many years ago, the necessity of effective therapeutic measures if the human race were to be significantly benefited by its endeavors. Intensive medical research has provided this information thereby privileging every human being to be a beneficiary. American trees have not yet had the benefit of such therapeutic research and therefore once stricken with internal diseases can expect little human assistance. Shall the work of the tree doctor be elevated to the level of a recognized science with its attendant horticultural blessings or shall the shade and ornamental tree assets of the country continue to be the problem of enthusiastic but helpless custodians?

The fund of information in the field of ornamental tree pathology is so limited, as to means of rescuing trees so afflicted, that this profession is practically helpless in the face of these advancing diseases. Fundamental information pertaining to tree physiology and parasite destruction is urgently needed. Exploration of the subject of Tree Therapeutics is proposed.

Tree Therapeutics has for its purpose administrations to trees for the:

1. Correction of malnutrition.
2. Arresting of established infections within the tree.

Tree Therapeutics, to be successfully employed, must be fortified with concrete facts pertaining to:

1. Nutritional needs of the various shade tree species for full attainment of vigor.
2. Antiseptic chemicals, compatible with normal tree physiology, that will inhibit or kill the established parasite.
3. Practical and effective methods of administering to trees for malnutrition and disease control.

Having designated the needs for the effective employment of the principle of tree therapeutics let us examine the contributions of our present knowledge to such a program. Such an examination will reveal.

1. Tree fertilization research has not gone beyond recording the linear growth produced, general appearance of the tree, etc. Empirical fertilizer formulae are devised and dosages recommended. The question of actual mineral assimilation by the tree for the production of wood and leaves awaits investigation. Soil requisites have been dismissed by employing meaningless generalities. Malnutrition may pave the way for disease. Information on this subject is practically non-existent.

2. Scores of investigators have been intrigued by the possibility of developing internal treatments for tree diseases. It is quite reasonable to assume that most of them pursued the problem until the complexities of the chemical involvements forced them to surrender. Antiseptic chemicals and knowledge of wetting agents were meager compared with those of today. The most appealing phase of the disease control aspect of Tree Therapeutics is that a chemical may be discovered that will serve as a specific for more than one disease. Such a discovery would subordinate the tedious and less remunerative investigations pertaining to the biology of each parasite, their host-parasite relationship, etc. Research on the subject of disease control by feeding or injection

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Detroit Success

The last vestige of doubt must surely have been removed from the minds of any who may have questioned the value of taking the National Shade Tree Conference to middle-western cities. The recent sixteenth conference at Detroit was an overwhelming success.

As a matter of fact, the registration was the second highest in the history of the annual meeting—396 answered the call.

The idea of spreading these conferences over the entire area east of the Mississippi can only result in a greatly expanded membership and a greater respect, by commercial arborists and the public, in the profession. The greatly increased attendance by City Foresters and Park Superintendents is gratifying and should encourage a much greater effort by conference officials and members to enlist this all-important field of arborists.

Dr. E. N. Cory of the University of Maryland was a happy selection as president. With the seventeenth conference practically in his backyard, Washington, D. C., he should be a tower of strength in making the Capital a bee-hive of tree men next August. Dr. D. S. Welch of Cornell University was elected vice-president. He is a conference supporter from "way back when" and reflects the excellent judgment of the ballot. To attempt comment on the re-election of Drs. L. C. Chadwick and Paul E. Tilford as secretary-treasurer and editor, respectively, would be, to coin a phrase, "like carrying coals to Newcastle"—their records speak loudly of their unselfish devotion to the betterment of tree preservation.

For the first time in its history, the conference has elected a "wild" westerner to one of its committees. Roger F. Sohner, arborist of San Anselmo, Calif., will serve for three years on the membership committee. Aside from the fact that Roger will be a mighty active member of this committee, is the widening sphere of influence that the conference is acquiring. It is truly becoming *National.* R. B. Friend of New Haven, Conn; W. C. Biller of Arlington, Va; and Dr. J. C. Carter, Urbana, Ill., round out the new members of the committee.

Karl Dressel rounded out his "third term" in royal fashion. Tremendous progress has been written into the conference archives during Karl's spell as navi-

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Civic Values

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a standard width of roadway, a standard set-back and even a standard amount of fall from building line to curb to accomplish drainage—as if the trees did not already have difficulty enough to obtain adequate moisture. Many of these standards could be made advantageously flexible with logical planning cooperation.

It is, indeed, disheartening to be confronted with the problem of planting a street, the width of which is such as to call for liberal spacing, and find that an even and adequate distribution of light, according to the lighting engineer, at least, calls for an arrangement of lamp posts with which no logical arrangement of appropriate varieties can be compatible. Then too, over-head wires may seem impossible of relocation to a point where they will not interfere. And finally, the set-back may be inadequate for the planting of any of the more ordinary forms available.

Regardless of how wisely we may make our selection and how carefully we may arrange our plantings, time will produce a shambles if we do not provide adequate maintenance. The greater portion of the nation's street-trees have, undoubtedly, never experienced what is truly meant by this. It has been truthfully said by someone in the past that "man begins to die when he begins to live." This should not be as true with respect to street-trees. Their life-span is longer than man's; how much, none of us really know.

If we reflect for a moment on how completely our street-trees, from which we may derive much pardonable pride, are taken for granted, we will not be liable to get up in the night to congratulate ourselves. Outsiders in the trade may praise us, but we should accept their plaudits with the proverbial grain of salt, as they probably want to sell us a spray-outfit or get a permit to fill a man-sized cavity that does not warrant the outlay and that, by the way, we will later be required to demolish to get to the dump. Perhaps, with all our conscientiousness, we have "missed the bus" by not setting up an example of model perfection. It is possible that we could demand more by showing how well a single street can be treated than by depending upon city-wide complaints, as is even sometimes recommended, to justify our invariable annual plea for adequate funds. The latter might more often be interpreted as lack of ability. It would seem rather, that the secret may be found elsewhere. This, however, is subject to conjecture.

The matter of the relative desirability of various kinds of street-trees will vary with the section of the country concerned. A variety amenable to frequent clipping may have its uses under certain conditions, even if generally considered inferior if allowed to develop naturally. Nurserymen should be given frequent or standing orders for a limited quantity of otherwise "inferior" trees so as to insure their always being available. They should also be encouraged to propagate staminate forms, by grafting, where the two sexes occur on separate individuals and their fruiting is objectionable. Pyramidal and even spreading sorts in quantity may also be found to need encouragement. Distinctive flowering forms are capable of establishing a reputation for a city, if not its forester. They all should be selected wisely, however, so as to avoid a potential epidemic.

The question of susceptibility to insects and disease is, perhaps, no more liable to be disregarded and the old rule of avoiding "pure stands" broken, than is the equally important rule of adequate spacing, particularly when pressure is brought to bear. It should be remembered that a tree must be able to grow vigorously to be successful as a street-tree. The more vigorous it is, the less liable it is to insect and disease attack. It cannot require pampering, but should be capable of responding to reasonably good treatment and show its effect. The more desirable, but not necessarily aristocratic the tree, the greater its effect on land values.

—*Courtesy, Baltimore Park Department*

American Elms 20 ft. apart on a 24-ft. street—parkway two feet. Trees are planted too closely to intersection. A fine example of how American Elms SHOULD NOT BE USED.

The real-estate operator will tell you that each tree one foot in diameter standing in front of an average cottage type property will effect his price for such a lot by from 5 to 25%; depending, of course, on the class of development, condition of the tree and the variety, in that order. It would appear, then, that the matter of maintenance is more important than that of selection. Arrangement, of course, affects maintenance in that trees liberally spaced to insure proper development often bring about a 25 to 50% reduction in the maintenance costs. Small-growing trees, less expensive to care for, may be intersperced to satisfy the purchaser of a lot not having a tree of heroic size and may be of such a character as to off-set any otherwise apparent disparity from the standpoint of desirability.

In the higher type of development, assessments are always higher, so that the higher percentage value of the tree may not serve to justify larger appropriations for maintenance. In some instances where a serious epidemic is experienced that may be spread by tree workers, a little wholesome neglect may redound to the benefit of an over-planted variety. It would appear, however, that mature trees in good condition represent approximately a 15% differential in assessment values and, hence, in the taxable basis of even unimproved suburban property.

All classes of city dwellers take pride in their trees and want them to be given proper attention. When funds are short and their demands can not be met they often express wonder as to what they pay taxes for. Few would object to being taxed a few mills for tree-maintenance, especially if they knew from their tax bill what portion was ear-marked for the purpose. This system is in vogue in some cities. The office-holder may not care to commit himself as to just what will be done with each tax-dollar, but every dollar spent on trees is appreciated and, in too many cases perhaps, this return for their money comes at such long intervals to the tax-payer as to seem almost in the nature of a "long shot."

Just as a great house is less forbidding

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Elms In America

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pagated from certain individuals of known good habit.

Several varieties are clear evidence of the diverging habits of the American elm. There is, for instance, the variety *columnaris* with rather upright branches forming a wide columnar head. The variety *ascendens* is more narrow, distinctly columnar. Other columnar or narrow pyramidal forms would include the "Lake City" elm, the "Moline" elm, and the "Princeton" elm. Sometimes a variety *"urni,"* or "vase-shaped form," is found

Showing characteristic form of Ulmus thomasi—Rock Elm.

listed in nursery catalogues; this is, in reality, the true *U. Americana.* Then too, there is the variety *pendula,* which has all the good qualities of *U. Americana* with the addition of drooping branchlets, making it decidedly graceful. These and other forms should, of course, be asexually propagated in order to preserve their form.

The slippery elm (*U. fulva*) is usually found over the same range as the American elm but is not such an excellent ornamental and only grows about 60 feet high. Its form is round; its head, broad and somewhat open; and the foliage, not so dense as that of the American elm. From the muscilagenous inner bark of this tree, very popular cough drops were made at one time. The slippery elm is slightly more susceptible to elm-beetle injury than the American elm, and need never be used as a substitute for that much better tree.

The winged, or wahoo, elm (*U. alata*) of the South is a vigorous growing, small tree with a wide-topped, oblong head, reaching a height of only about 30 feet. The leaves are smaller than those of either of the elms already described, and pronounced broad and opposite corky ridges grow along the vigorous young branches. Sometimes the winged elm will grow in protected places as far north as Boston, but it is not dependably hardy north of Virginia. Where it can be grown it makes a vigorous growing, small tree, often with graceful arching branches. It should be grown in preference to the American elm, however, only when its small size seems more desirable.

Three other elms, native in the United States, are seen occasionally but are not offered by nurseries because the trees have little to offer as ornamentals when compared with the beautiful American elm. One is the cedar elm (*U. crassifolia*) of Texas, Mississippi and Arkansas. It is very common in these states but is found to be of little value elsewhere in the United States. It is a somewhat round-headed tree, growing about 75 feet tall and having, like *U. alata,* opposite corky ridges along the twigs. Closely related is the red elm (*U. serotina*) native to Kentucky, Alabama and Georgia but hardy as far north as Boston. It has spreading, somewhat pendulous branches, forming a broad head; and it, too, often develops the same corky wings along vigorous growing twigs. These two elms and *U. parvifolia,* the true Chinese elm, are unlike all other members of the genus in that they develop their flowers and fruits in the fall and not in the spring.

The last native elm species is the rock elm (*U. thomasi*), *formerly called U. racemosa.* Though at present it is rarely grown, the tree might be valuable because of its unique habit of growth. About 90 feet tall at maturity, it usually has a central trunk and irregularly developed short, lateral branches, giving an outline which is oblong, rounded at the top, but not necessarily dense. Its slow growth and loosely borne branches are probably the reasons why it has not been grown much as an ornamental, but its habit of growth makes it easily distinguishable, even at a distance, from the rest of the elms. It, too, frequently develops irregular corky wings along its younger branches.

So much for the native elms. They are seen everywhere in the East and the midwest; and simply because they are trees, some of the less desirable ones have been left standing after the surrounding land has been utilized for building purposes. As stated before, the last three species mentioned are probably not grown in nurseries and not planted in landscape work, but are seen here and there simply because they have remained untouched, in areas where man has "developed" Nature's handiwork. The American elm is the best—far superior to the others in every way.

The Key

The following key is offered merely as an aid to the identification of foliage.

A varietal form of American Elm, the pendulus or weeping. This is a magnificent tree—Ulmus Americana pendula

More exact keys have been made, in which the flowers and fruits are used, but many a tree man is confronted with the perplexing problem of identification when flowers and fruits are not available. Hence, this key. Every one of the elm species varies greatly, and to make a key using only one or two characters is not very satisfactory. Therefore, this key is not infallible, but it may serve its purpose to many who are justly perplexed concerning the identification of these elms.

To the person not familiar with using such keys, this may at first seem confusing, but careful study will prove its simplicity. For instance, all elm species fall into one of four groups (marked by the figure 1), because of corky ridges on the

(*Continued on next pa*

Elms In America

(*Continued from preceding page*)

branches, or leaves with several points at the apex, or leaves simply serrate, or leaves doubly serrate. To place a plant in one of these four groups, questions should be asked concerning these four characteristics *in this sequence.* Once done, the remaining points should be taken up in the particular group, *in the sequence suggested in the key.* Identification will be aided materially if the habitat of a tree is known. For instance, in the first group (corky ridges on the branches) *Ulmus crassifolia* would not be found in northern Minnesota, nor would it be likely that *U. procera* and *U. japonica* would be found growing wild in the woods.

Be certain that the tree is examined carefully for all possible marks of identification, and that many leaves are examined since one alone would not tell the full story.

It should be noted that this key does not take into consideration the varieties of these species, many of which can be noted by their form alone. Also, and this is very important, it should be noted that the following species are not common in America except in botanical collections: *U. japonica, laevis, ploti,* and that other species, like *U. thomasi* and *serotina,* are used very little in landscape work. A knowledge of these facts should make this key much simpler.

The elms are so variable that it is likely that they will continue to be difficult to identify for many years to come.

ABBREVIATED FOLIAGE KEY TO COMMON ELM SPECIES

1. *Corky ridges or wings on younger branches*
   - 2. Leaves simply serrate ..... *Ulmus crassifolia*
   - 2. Leaves doubly serrate
     - 3. Young twigs glabrous or nearly so
       - 4. Wings usually two and opposite ..... *U. alata*
       - 4. Wings several, not necessarily opposite, flowers in spring, not native ..... *U. carpinifolia suberosa*
       - 4. Wings several, not necessarily opposite, flowers in fall, native ..... *U. serotina*
     - 3. Young twigs pubescent
       - 4. Tree irregularly columnar ..... *U. thomasi*
       - 4. Tree not irregularly columnar
         - 5. Leaves 2-3 in. long, wings occasionally ..... *U. procera*
         - 5. Leaves 3-4.75 in. long, wings occasionally ..... *U. japonica*

1. *Leaves three pointed at tip or occasionally so*
   - 2. Mature branches reddish brown, hairy while young; leaves occasionally with one or two extra points at apex ..... *U. glabra*
   - 2. Mature branches pale yellowish or grayish brown, glabrous or nearly so when young; many of the leaves three-pointed at apex ..... *U. laciniata*

1. *Leaves simply or nearly simply serrate, .75-2.75 in. long*
   - 2. Leaves often nearly equal at base, many leaves showing indications of double serration, young branches pubescent or glabrous, stipules broad, flowers in spring ..... *U. pumila*
   - 2. Leaves usually unequally rounded at base, young branches pubescent, stipules linear, flowers in fall ..... *U. parvifolia*

1. *Leaves doubly serrate*
   - 2. Young branches glabrous
     - 3. Leaves 2.75-6 in. long
       - 4. Leaves usually twice as long as wide, no conspicuous axillary tufts of hair ..... *U. Americana*
       - 4. Leaves less than 1.5 times as long as wide, usually with conspicuous tufts of hair in axils of veins on under surface of leaves, very variable ..... *U. hollandica*
     - 3. Leaves 1.25-3.25 in. long
       - 4. Petioles .25-.5 in., leaves 2-3 in., smooth above ..... *U. carpinifolia*
       - 4. Petioles less than .25 in., leaves 1.25-2.25 in., slightly scabrous above ..... *U. ploti*
   - 2. Young branches pubescent
     - 3. Leaves often glabrous beneath ..... *U. Americana*
     - 3. Leaves pubescent beneath
       - 4. Leaves 2-3 in. long ..... *U. procera*
       - 4. Leaves longer
         - 5. Leaves widest at middle, 4-8 in. long ..... *U. fulva*
         - 5. Leaves widest above middle, 2.5-4.75 in. long
           - 6. Leaves scabrous and pubescent above, corky wings on branches occasionally ..... *U. japonica*
           - 6. Leaves usually glabrous above, very unequal at base ..... *U. laevis*

THE *City Arborists'* CORNER

DISCARD THIS TREE, ADVISES

FRANK KARPICK
Assistant City Forester, Buffalo, N. Y.

(Editor's Note: You City Arborists and Foresters are invited to make this column your own. You might have the answer to a problem that will help someone else. Send it to the Editor.)

SILVER MAPLE (*Acer Saccharinum*)

A tree, however desirable it may be as a forest tree, or as a specimen tree on a lawn of a large estate, may not be worthy of the designation of a "Street Shade Tree." There are certain points which it must possess in order to fulfill this specific function.

The Silver or White Maple, *Acer Saccharinum,* is generally considered as an undesirable species for shade tree planting, and rightly so. We know that we can't expect any trees to go along year in and year out without any maintenance. Periodical pruning and spraying is necessary, but if a tree is of the kind which needs too much labor, then the labor cost will outweigh its other desirable features.

This tree is considered a fast grower, and as we all know, a fast growing tree will always be weak wooded, causing the branches to be either very flexible if thin, or very brittle if their diameter growth is greater. This maple has very drooping branches which makes it necessary to have the tree pruned at least once a year, in order to allow proper clearance for pedestrians and vehicles.

Any severe wind storm that comes along, and we've had plenty of them, will whip the branches around so that a good many of the brittle branches break off, making bolting and cabling necessary, and at times, when the limb tears too far, large open cavities are left in the tree. Sleet storms in the early spring also cause a good deal of damage to the brittle branches in the same way.

In a city like Buffalo, where the tree population exceeds one-third of a million, with as limited a force as we have, it is not possible to prune trees only at

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Dusting Trees

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sembly, V belt driven from the motor at 150 R.P.M. was mounted above the fan.

Dust from the hopper drops through a slot ¼ in. by 1 in. and into a tube wherein a slight back pressure has been created by the fan. To the end opposite from the fan the exhaust from the motor has been connected. The dust is held in the tube momentarily and heated and dried out, causing the dusting materials to be separated into their infinitely fine particles. This feed arrangement would have to be changed to use sulphur because of fire hazzard, but has worked especially well on calcium arsenate, cryolite, dutox and botanical dusts.

Above the fan, motor and hopper assembly a substantial platform was constructed, upon which a seat for the operator is installed. A manually operated throttle and dust material control is provided alongside of the operator's seat.

The nine-inch discharge from the fan is reduced to five inches by a conical tube thirty-six inches long. To the five-inch end of the tube, a piece of flexible rubber duster hose, five feet long, is attached. This allows the operator to divert the blast of dust at many angles.

The above described equipment is mounted on a one-and-one-half ton truck. The duster weighs about one thousand pounds and occupies a space five by seven feet on a seven by twelve foot truck bed. The remaining room on the bed is used to carry four thousand pounds of dust.

On a good night's run, a three-man crew can treat fifteen hundred to two thousand large elm trees. With a labor charge of eighteen dollars, equipment expense of twelve dollars, material cost of two hundred and forty dollars, a total cost of a night's run amounts to two hundred and seventy dollars. With seventeen hundred and fifty trees as an average, the cost per tree is slightly over fifteen cents.

In night work a good lighting system must be provided. A portable, eight hundred and fifty watt gasoline engine driven light plant, running two three-hundred watt flood lights gives adequate light for good thorough work.

In the last six years, over fifty thousand elm trees have been dusted with satisfactory results. In the season just passed less than fifty trees showed pupation at the bases. Before the dust program this condition affected several thousand trees. Constant inspection is carried on from April to September and immediately upon finding an infested area, it is treated at once.

Several other shade tree insects have been controlled by dusting, namely, the Box Elder bug on Box Elders; Aphis on Elm, Walnut, Maple and Ash; Red Humped Caterpillar on Walnuts and Planes.

As to the selection of materials for a specific pest, the field men of the dust manufacturers were consulted and the dust best suited to that particular pest selected was chosen, of course, taking into consideration any peculiar or unusual conditions.

As a result of the experience gained in the last six years, the writer feels that the duster has earned a place in shade tree pest control.

Civic Values

(*Continued from page* 12)

and aloof when situated in a tree-shaded park, so does a city with tree-lined streets seem more friendly and hospitable. Every municipality should strive to cause the stranger within its gates to go away with a wish to return. To the city bent upon expansion, creditable street-trees may be almost as great an asset as low living costs or high wages. Surely, their lack is keenly felt by those long accustomed to the association with trees elsewhere earlier in life. Just as has been said of pictures; we could live without trees, perhaps, but not as well. It is not the purpose here to go into the matter of the influence of trees upon health and happiness. That was taken for granted when their effect on land values was referred to.

It would seem to be good practice, then, to pick out a prominent place where all who pass may see and carefully plan a planting of exceptional merit. Choose as outstanding a variety as conditions will permit. Arrange the trees in a logical and orderly manner. Prepare the soil liberally and well. Select each tree as a perfect specimen—not the run of the row. Plant them properly and watch over them as never before, keeping them faultlessly groomed, even at the temporary expense of some others.

Such practice soon should convince the observing that a master has the city's trees in hand and his wants, within reason, will be more readily met with. Much may be gained through friendly relations with the many sorts of organizations featuring civic welfare and beauty, but more can be accomplished, perhaps, through a cooperative real-estate board. They are the first to protest against what seems to them to be exorbitant taxation. When the relation of street-trees to land values is brought home to them, they will encourage if not insist upon an adequate appropriation. Many of those in street-tree work may have come to depend rather largely on emergency governmental agencies for help during the past few years. This form of assistance is being perhaps slowly but surely withdrawn. We should look into the future now and endeavor to meet our ultimate needs.

THE CITY ARBORISTS' CORNER

(*Continued from preceding page*)

the time they are dormant, and we are forced to prune trees all year 'round. Sometimes we hit a section where soft, or silver maples predominate, just about the time when the sap starts rising. After the cuts are made, the trees bleed so freely that it is impossible to paint the cuts with pruning paint. If a severe frost happens to strike during the following night, in the morning the trees will resemble decorated Christmas trees with icicles hanging at all the cut branches. This species seems to "bleed" more freely than any of our street trees.

Another feature, which in some sections of the country might be considered desirable, is the length of time the tree holds its leaves. The leaves come out very early, and are still on the trees in November. Some years, when there is an early snow fall, the weight of the snow on the leaves causes a considerable damage to the branches.

The foregoing arguments are a few showing the reasons why the Soft or Silver Maple should not be used to embellish city streets, even if it may be necessary to pay much more for other more desirable varieties. The statement which can be aptly used here is the same as has been used for automobiles, "It isn't the initial cost, it's the upkeep."

Street Tree Survey

(*Continued from page* 10)

The following collaborators have sent in their completed charts recently: Mrs. G. R. Marriage and Miss Molly Marriage, "Upton Gardens," Colorado Springs, Colo; Felix Seeger, Supt. of Parks, New Orleans, La; Marshall E. Higgins, Onondaga County Park & Regional Planning Board, Syracuse, N. Y; F. J. Torras, Supt. of Parks, Brunswick, Ga; Dr. August Beilman, Missouri Botanical Garden, St. Louis, Mo; Hollis J. Howe, City Forester, Baltimore, Md; N. P. Johnson, Norfolk Park Commission, Norfolk, Neb; Hugo C. Meyer, Park Commissioner, El Paso, Texas; Frederick C. Burk, Supt. of Parks, Swampscott, Mass; Donald D. Obert, City Forester, Fort Worth, Texas; Dr. H. B. Pierson, State Entomologist, Augusta, Maine; Wm. F. Volz, Supt. of Parks, Cedar Rapids, Iowa; Earl F. Elliot, Supt. of Parks, Rockford, Ill; E. A. Westbury, Park Commission, Iowa Falls, Iowa; Everett S. Henderson, Jr. Engineer, State Highway Commission, Augusta, Maine; James J. Curtin, Supt. of Parks, Waterbury, Conn; Hugo Koehn, City Forester, Houston, Texas; H. Lee Bancroft, Supt. of Parks, Lansing, Mich; C. C. Bunnenberg, Supt. of Parks, Tyler, Texas; Stewart E. King, City Forester, San Antonio, Tex; Walter L. Wirth, Supt. of Parks, and Fred S. Eaton, City Forester, New Haven, Conn; Gus C. Wofford, Supt. of Parks, Huntington, W. V.

There is no particular hurry for this work. We would rather have all participants take their time and cover each item thoroughly. The summer is a period of heavy drain on the time of most park and tree men, so with the advent of fall and winter more time will be found to concentrate on the charts and many who have them are no doubt waiting for this period of comparative release from pressing duties.

For full details of the survey objective, we refer you to the July issue of TREES, but to recap the points to observe in filling out charts we shall enumerate:

1. List all *natives* and *exotics* on streets.
2. List commonly used trees on streets.
3. List as many trees as possible—broadleaf and conifer.
4. List trees that are little used but which have promise.
5. Mark "X" in blank squares on chart to designate points to be covered.
6. For remarks regarding individual trees, write on back of chart and identify by the corresponding number of the tree on the form.
7. When the chart is completed, return to TREES Magazine, Box 886, Santa Monica, California.

If you wish to participate in this important work, write the vice-chairman for your state, or TREES.

Fastest-growing timber tree of which I have heard is that of the Pawlownia mentioned by Marsh (p. 395), which during a season from April to November made a shoot from 4-5 inches in diameter by 20 feet long. Mr. R. Fyffe tells me that in Uganda the Blue Gum will attain 25 feet from seed in the first year.—A Text Book of Wood.

COL. WHITE TO SPEAK AT C. A. P. A. MEETING

The California Association of Park Administrators will travel north for the first time on November 8th when the regular bi-monthly meeting will be held in Fresno.

Ray Quigley, Fresno Supt. of Parks, has sent out the itinerary for the day and it should provide an interesting day. The speaker for the dinner will be Col. John R. White, Regional Director of the National Park Service.

Planting Trees

(*Continued from page* 9)

may be used to a limited extent where sewer laterals will not be involved. The horse chestnuts have become unpopular because of the mess caused by dropping blossoms and burrs. One of the greater problems of city forestry is to replace the misfits with the desirable. Often it is better to "seize the bull by the horns" and remove all the old trees on a street and replant with the proper species.

There have been far too many mistakes in the past in street tree planting, either through lack of knowledge and foresight, or through a tendency to use anything easily available without regard to conditions. With modern forestry divisions in the municipal set-ups of most cities and availability to all of the latest developments, there need be few mistakes in the future. "Plan wisely" applies to city forestry as to all lines of endeavor.

Some coniferous woods contain sufficient resin to glue boards together, as in the case of the Larch. Chalets made of Larch logs, roughly squared, will become quite weather-proof from the soldering together of the timbers by the abundant resin. The ancient Romans were careful not to use coniferous wood for doors; they employed Oak for this purpose.—A Text Book of Wood.

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THRU *the* MICROSCOPE

By
DR. C. J. HUMPHREY

TEXAS ROOT ROT: Wright (4) has presented the first progress report on the root rot investigations in the experimental windbreaks of Oklahoma and Texas. The resistance of trees under the dry land conditions of the Great Plains region varies somewhat from the data published by the Texas and Arizona Experiment Stations. Twenty-eight species are reported upon. Chinese elm, cottonwood, honey locust, and mulberry are too susceptible for successful use. American elm, catalpa, osage orange and sycamore are of doubtful value. Ailanthus, apricot, black walnut, eastern hackberry, green ash, Kentucky coffee tree, Russian olive, soapberry and Tamarix show high resistance.

The perfect stage of the root rot fungus, *Phymatotrichum omnivorum*, has never been scientifically determined. In an effort to check up its relationship with suspected organisms Cumley and Goldsmith (5) injected saline extracts or powdered mycelium of the *Phymatotrichum* into rabbits from which the blood serum was collected after eight days. By comparing the reactions of extracts from the suspected fungi when traces of the serum were added it was tentatively concluded that the root rot fungus is related serologically to certain genera of the puff-balls.

Those interested in this disease will find further investigations recorded in the last annual reports of the Arizona and Texas Experiment Stations at Tucson and College Station, respectively.

PERSIMMON WILT: At the close of 1939 the devastating *Cephalosporium* wilt of American persimmon (12), first reported in 1937 from Tennessee, existed in all the southeastern states (about 118 counties) south of Kentucky and Virginia and east of the Mississippi River, with two outposts in eastern Texas. The disease is characterized by sudden wilting and defoliation, coupled with fine brownish-black streaks in the wood. Salmon-pink spores are produced in large quantities between bark and wood after death. Asiatic persimmons are apparently highly resistant, though not immune.

DEFECTS IN OAK AND HICKORY STANDS are discussed by Geneaux and Kuenzel (14) in a research bulletin from the Iowa Experiment Station. The effects of fire, grazing, improper cutting practices, insects, fungi and climate on quality and yield are analyzed. Five to eight per cent of the total merchantable volums is said to be defective, the principal agents responsible being fungi and insects, attack from these being aggravated by the other factors mentioned. Defects are discussed under the following types: Fire scars, branch stubs, butt rot, and insects. The principal fungus concerned in butt rot of oak is *Stereum gausapatum*.

CHLOROSIS: This trouble of various trees and shrubs may readily be confused with the virus mosaics but is mainly caused by mineral deficiencies in the soil. Crawford (1) summarizes the question for New Mexican conditions and mentions the weakening effect in cottonwoods, poplars, willows, rose, conifers, peach and other fruits. Besides mineral deficiencies of magnesium, iron and nitrogen, he notes as causes the plugging of stomata by dusts, subnormal temperatures in early spring and excess water in the soil. Remedial measures consist in the correction of these conditions. The injection or other application of iron salts has become a standard practice, the most effective and permanent treatment being the application to the soil of barnyard manure and equal parts of iron and aluminum sulphate at the rate of one pound of the mixture to each 1-inch in diameter of the plant, spreading uniformly beneath the crown or applying in holes 12 to 18 inches deep.

Starr (2) reports for Wyoming that five grams of ferric phosphate per inch diameter injected into cottonwoods and other deciduous trees through holes bored in the trunks has proven satisfactory, particularly in early spring treatments. Summer treatments have resulted in total leaf fall but green leaves soon reappeared and were almost normal before fall. Beneficial results may persist four or five years.

BLEEDING CANKER OF BEECH is reported by Howard (13) in Rhode Island and Massachusetts. This is caused by *Phytophthora cactorum*, the same fungus as causes a similar vascular disease in maple.

(1) N. Mex. Agr. Exp. Sta. Bull. 264, 1939; (2) Phytopathology 30, No. 1, p. 23. 1940; (3) Phytopath. 30, No. 1, p. 13. 1940; (4) Plant Disease Reporter 24, No. 1, p. 13. 1940; (5) Phytopath. 30, No. 1, p. 4. 1940;

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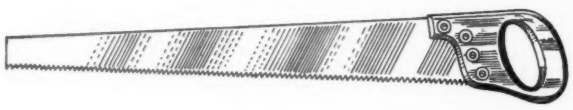

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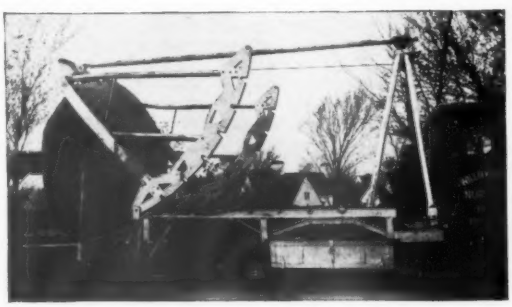

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Authors and Books

The following books may be ordered from TREES Magazine, Box 886, Santa Monica, California.

NURSERY COST FINDING, by John Surtees. A. T. De La Mare Company, Inc., New York. 188 pp. Price, $7.50.

Many abuses in the nursery trade have arisen because nurserymen were sadly lacking in the fundamental knowledge of how and what to charge for the stock they raised. Many people kid themselves that they are making a profit but a close adherence to the various cost charts that have been so painstakingly worked out in this valuable book will quickly take the guesswork out of your business.

There is contained a series of forty charts covering every possible operation on every size of evergreens, deciduous trees and shrubs, ranging all the way from a one-foot shrub to a twenty-inch caliper tree; weights of balls and quantities for figuring carlot freight charges; a simple system of cost finding. This book can repay its cost on one small job in savings to you.

ILLUSTRATED FLORA OF THE PACIFIC STATES. Reprint of Volume 1, by Le Roy Abrams. Stanford University Press, Palo Alto, Calif. 538 pp. $7.50.

The reprint of this well-known book is the first of a four-volume series. Volumes 2 and 3 are in preparation. The reprint of Volume 1 has been brought up to date covering changes adopted by the 1935 and 1936 International Congresses. These congresses modified and modernized the International Rules of Nomenclature. Another reason for the reprint is that the paper used in the original printing failed to stand the service that a reference book of this value is subjected to; therefore, persons possessing copies of the original may obtain the new edition from the publishers upon receipt of the old volume (which may be mailed for six cents if marked "Book") will credit the owner with $3.00 toward the purchase of the new volume. Volume 2 will be published in December.

EXOTIC TREES. Los Angeles County Forestry Department, by Carl O. Gerhardy. 16 pp. Mimeographed.

A report covering eighty varieties of exotic trees tried under the severe conditions exacted in Southern California reforestation practice. Contains valuable data relating to endurance for certain varieties as street and highway trees.

HILL'S BOOK OF EVERGREENS, by L. L. Kumlien. D. Hill Nursery Co., Dundee, Ill. 303 pp. Illus. Price, $3.50.

Without a doubt this is one of the most useful and interesting books we have had the pleasure of reading in a long time. Compiled from the practical experience of the country's oldest growers of evergreens, it cannot help being totally authentic and completely practical.

A chapter on the "Evergreen Families of the World," one of fifty, will help to clear up any question that should arise in your daily work on this subject. To list just a few of the subjects covered will give an inkling of the value contained: Fertilizers for Evergreens; Weights and Shipping Information; Specimen Planting; Methods of Propagating Evergreens. Part four deals with "A Description of Varieties." Definitely an indispensable book.

TREES OF SANTA BARBARA by Maunsell Van Rensselaer. Published by the Santa Barbara Botanic Garden, Santa Barbara, Cal. 142 pp. Profusely illus. Price, paper bound, $.75; cloth bound, $1.50.

Santa Barbara has long been known as the "Arboretum" or "Botanic Garden" of the west, however, most of its horticultural treasures are hidden on the many beautiful estates or here and there, where the wandering plant lover might never penetrate or come across these many treasures. In this excellent guide a complete list of 550 species and varieties is listed as well as where they may be seen. The next time you go to Santa Barbara have this book with you and look forward to a horticultural feast. Valuable reference as to hardiness and adaptability of many little-known trees and shrubs.

BARK BEETLE CONTROL. A report prepared by the Forestry Division of the Los Angeles County Forestry Department by Averill J. Barton. Mimeographed.

A BRIEF GROSSARY OF THE MORE COMMON BOTANICAL AND HORTICULTURAL TERMS. Bulletin of Popular Information, Arnold Arboretum, by Clarence E. Kobuski. 56 pp. $.25. Limited supply.

SERVICE CHARTS, SERIES No. 1, by John Surtees. Published by the author. Box 295, Ridgefield, Conn. 20 pp. Mimeo. Price, $2.00.

One of the most unique and useful publications brought out in recent years. Estimating landscape jobs where excavating and filling are required has always been catchy. Tree ball weights, size, diameter, etc., are given very closely. The complete contents follow: (1) Tree Balls: (a) diameters; (b) depths; (c) excavations; (d) cubic contents; (e) weights; (2) Tree Pits: (a) diameters; (b) depths; (c) excavations; (d) ball displacement; (e topsoil required; (3) Hedges: (a) length; (b) width; (c) excavation; (d) topsoil; (4) Lawn Areas: (a) areas; (b) excavation; (c) topsoil; (5) Designs; (6) General information. Takes a lot of guesswork out of close jobs.

ROCKY MOUNTAIN TREES, by Richard J. Preston. Iowa State College Press, Ames, Iowa. 302 pp. Illus. 1940. Price, $2.00.

A very complete manual covering conifers and broadleafs from the aspect of forest usage. A check list of trees in the states covered in the text includes: Arizona, New Mexico, Colorado, Idaho, Montana, Nevada, Western Texas, Utah and Wyoming—this check list adds immeasurably to the value of this fine book. Ten pages are given to a description of the vegetational zones and silvical characters for the layman or student. By far the most complete work yet published for this area and should be in every tree library.

THE HOME BOOK OF TREES AND SHRUBS, by J. J. Levison. 424 pp. Illus. Simon and Schuster, New York. 1940. $5.00.

This new book for the home owner is beautifully printed in large type on heavy enameled book paper and is profusely illustrated—many of the illustrations being taken from the author's work on his own place and those of personal clients.

It would have been helpful, in a book of this type and title, if the chapters on tree care and woodland improvement had been expanded even at the expense, if necessary, of at least a portion of the space devoted to lawns and flower gardens.

—A. Robert Thompson.

"Shall the Tree Doctor"

(*Continued from page* 11)

may open an expanse of practical application that will justify generous speculation.

The principle of tree therapeutics has progressed beyond the theoretical stages. Successful injections (ferric phosphate) into cottonwood trees for the correction of chlorosis, a degeneration of the green pigment in leaves, have been reported.

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(*Continued from page* 11)

gator. He acquired the love and respect of every member for his pleasing self and his strict adherence to conference ideals.

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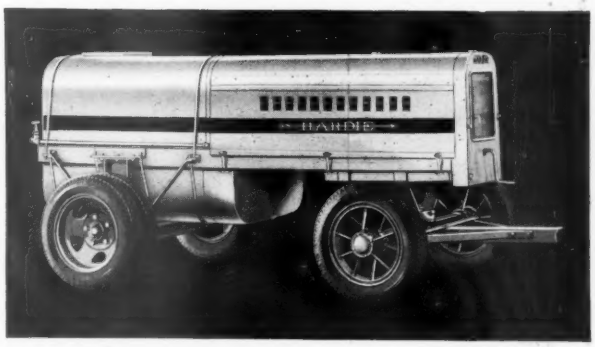

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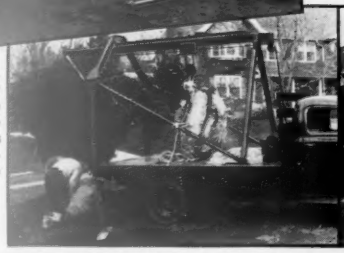

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